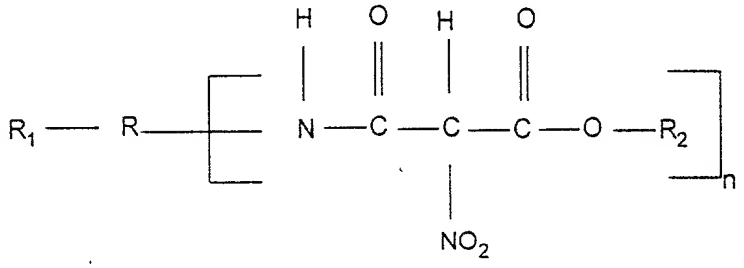
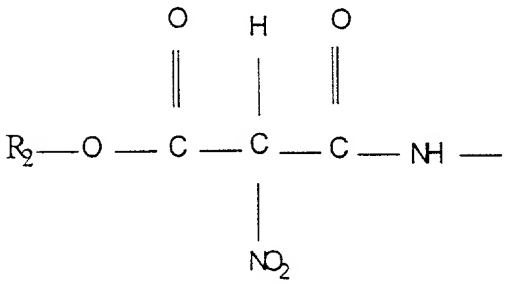
We claim:

1. A nitrile oxide precursor compound of the general formula:



Formula I

wherein R is a substituted or unsubstituted C_{1-17} alkyl, alkoxy, cycloalkyl, aromatic or diisocyanate trimer; n is 1-10; R_1 is selected from the group consisting of NCO, CN, H, SO_2Cl, COCl, $N(CH_3)_2$ $C(O)CH_3$, $C(O)OCH_3$, $C(O)OC_2H_5$, C_6H_5, an acid chloride such as $SOCl_2$, or another group with reactive functionality, or

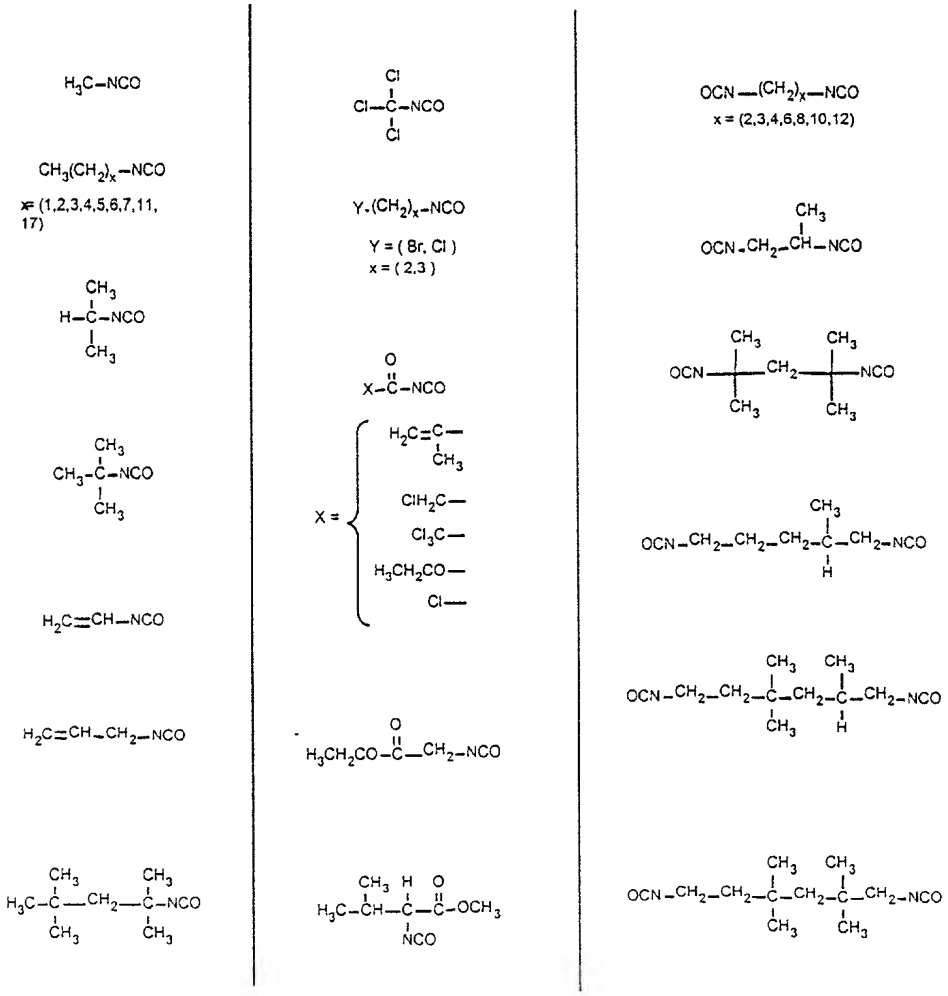


wherein R_2 is branched or unbranched alkyl with 1 to 5 carbon atoms such as ethyl, isopropyl or sec-butyl, and the like; provided that Formula I cannot be derived from p-phenylene diisocyanate.

2. A nitrile oxide precursor compound according to Claim 1 wherein R may be branched or unbranched, substituted or unsubstituted with

alkyl, sulfate, sulfonate, alkoxy, CN, NO_2 or an aromatic group. R may be a biphenyl group, fused rings or repeating aromatic groups.

3. A nitrile oxide precursor compound according to Claim 1 wherein R is derived from an aromatic or aliphatic residue of an isocyanate, diisocyanate, polyisocyanate compound or residue of an isocyanate, diisocyanate, or polyisocyanate compound selected from the group consisting of:



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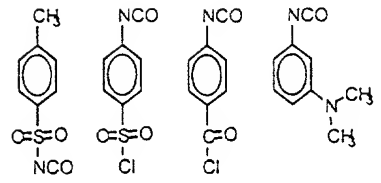
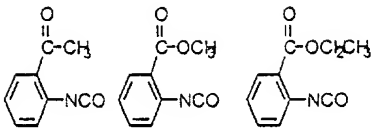
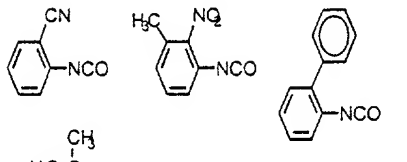
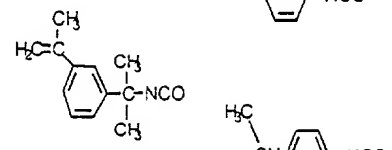
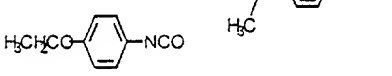
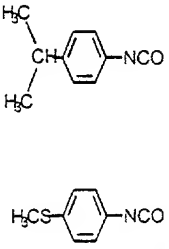


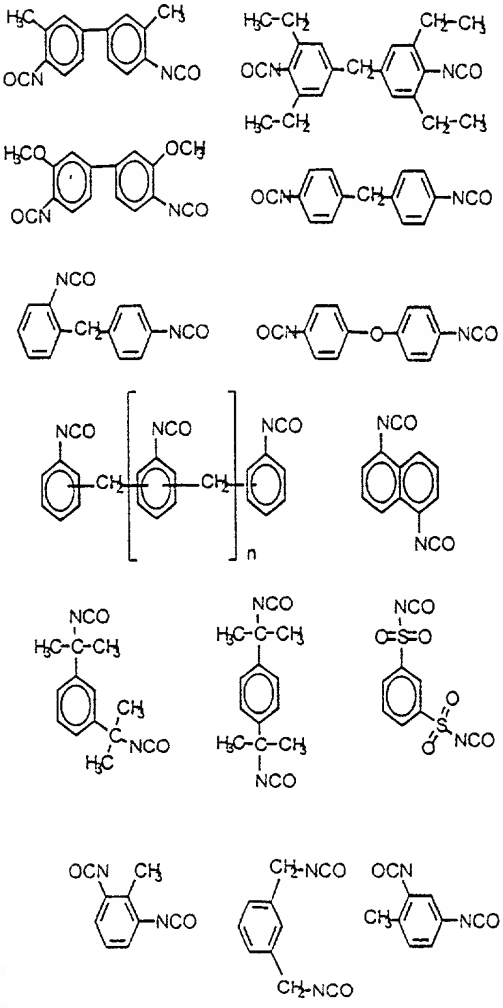


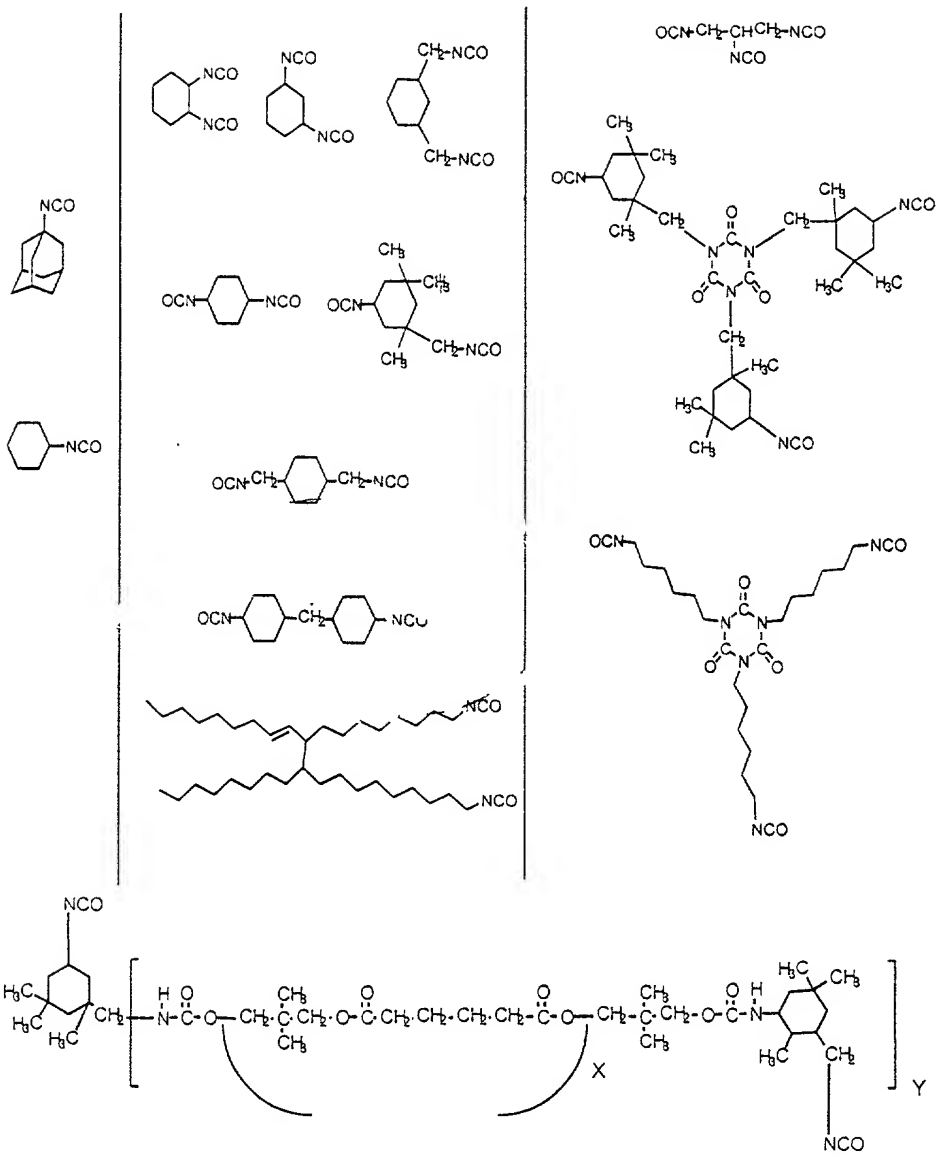












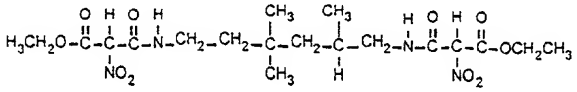
wherein in the above structures, n = 2-4, and x and y are chosen so that the molecular weight of the polyneopentyl glycol adipate diisophorone terminated isocyante structure is approximately 1350 and combinations thereof.

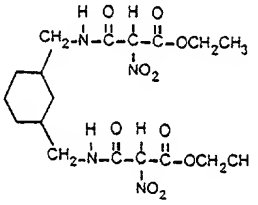
4. A nitrile oxide precursor compound according to Claim 1 wherein R is derived from an aromatic or aliphatic residue of an isocyanate or diisocyanate compound selected from the group consisting of 4,4'-

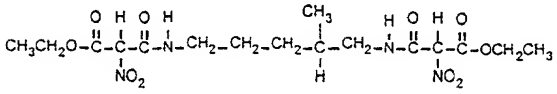
methylenebis(phenyl isocyanate) ("MDI"); DESMODUR W (hydrogenated MDI); isophorone diisocyanate ("IPDI"), 1-(1-isocyanato-1-methyl ethyl)-3-(1-methyl ethenyl)benzene("m-TMI"), isophorone triisocyanate, isophorone, tetramethylenexylenediisocyanate, ("TMXDI") and mixtures thereof.

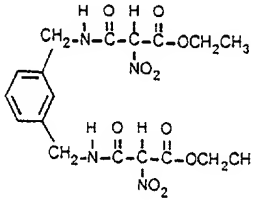
5. A nitrile oxide precursor compound according to Claim 1 wherein R is C_{3-17} alkyl.

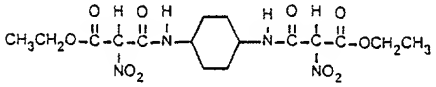
6. A nitrile oxide precursor compound selected from the group consisting of:

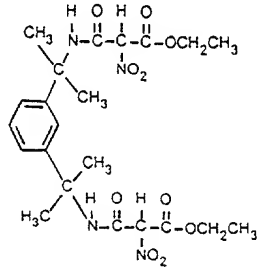


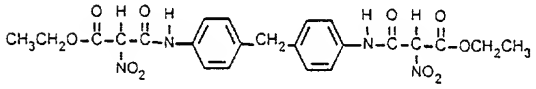












7. A process for the generation of a nitrile oxide compound comprising the steps of

a) generating a potassium enolate of ethyl nitroacetate in situ;

b) isolating said enolate; and

c) adding to said isolated enolate an isocyanate, diisocyanate or polyisocyanate, or isofunctional material.

8. The process of Claim 7 additionally comprising the step of mixing the diisocyanate with a polar solvent prior to adding the diisocyanate to the enolate.

9. The process of Claim 8 wherein the polar solvent is selected from the group consisting of diglyme, monoglyme, glyme, THF, DMF and DMSO.

10. A process for crosslinking a polymer composition comprising adding a nitrile oxide precursor to the polymer solution and heating the mixture to form a nitrile oxide in situ and subsequently crosslink.

11. A process according to Claim 10 wherein the polymer comprises one or more pendant or terminal functional groups selected from the group consisting of alkenes, alkynes, nitriles and isocyanates.

12. A urethane composition which is stable to temperatures below 120°C comprising the nitrile oxide precursor compound of Claim 1.

13. A pressure sensitive adhesive, reactive hot melt adhesive, polyurethane dispersion, thermosetting adhesive, thermoplastic adhesive or coating comprising a nitrile oxide precursor compound according to Claim 1.

14. An AB copolymer comprising a nitrile oxide precursor compound according to Claim 3, wherein A is the nitrile oxide precursor compound derived from 1-(1-isocyanato-1-methyl ethyl)-3-(1-methyl ethenyl)benzene ("m-TMI") and B is a compound with olefinic functionality.

15. A polyurethane reactive hot melt adhesive comprising a nitrile oxide precursor compound according to Claim 1.